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SCIENCE NEWS LETTER

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DETROIT

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THE WEEKLY SUMMARY OF CURRENT SCIENCE • OCTOBER 26, 1946

Not of Evil Omen

See Page 261

A SCIENCE SERVICE PUBLICATION

1921 TWENTY-FIFTH ANNIVERSARY 1946

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GENERAL SCIENCE

Academicians Visit USA

American Philosophical Society and National Academy of Sciences entertain foreign scientists at their fall meetings in Philadelphia and Washington.

Highlights of the Philadelphia meetings are in this issue and the next issue will contain reports of the Academy sessions in Philadelphia and Washington.

➤ A UNITED NATIONS in science, comprising 34 official representatives from the Academies of Science of foreign countries, was a feature of the autumn meeting of the American Philosophical Society in Philadelphia. The group, forming the largest and most distinguished body of overseas scientists to visit America since the war, also attended the meeting of the National Academy of Sciences, the first two days of which were moved from Washington to Philadelphia due to the Washington hotel strike.

There was some whispering of an "Eastern bloc" when the Academy of Sciences of the USSR failed to appoint a delegation, and when a duly appointed Polish delegation failed to leave Warsaw. However, it is pointed out in refutation that three countries usually considered as within the Soviet "sphere of influence" — Czechoslovakia, Hungary, and Rumania—all had their representatives here.

Oldest organization represented is Italy's Accademia Nazionale dei Lincei, organized in 1603; youngest is the Argentine Academia Nacional de Ciencias Exactas, which dates from 1937. Countries whose national academies were represented included Great Britain, France, Sweden, Denmark, Belgium, Hungary, Switzerland, Australia, Norway, New Zealand, Canada, Mexico, Peru, Brazil, Greece, China, India and Argentina.

Million Plants Unnamed

➤ ABOUT A MILLION plants are now known by name to botanists, Prof. Liberty Hyde Bailey, veteran Cornell University plant scientist, stated before the meeting. At that, the task of botanists is less than half accomplished, for he estimates that at least another million plant species await naming and exact description.

This situation makes a sharp contrast with the botany of less than two centuries ago, when the great Swedish naturalist Linnaeus believed that the total number of plant species in the world was not greater than 8,000. In the second edition of his classic *Species Plantarum,* published in 1763, he described 7,540 of them.

Exact knowledge and description of plant species is important, the speaker declared, if the applied plant sciences, such as agriculture, horticulture, forestry and pharmacology are to make progress. Of two plants that look almost alike yet are distinct species, one may be useful in breeding and the other useless, or one may be poisonous and the other harmless.

Of great importance, however, is the confident knowledge of the kind of plant you are dealing with when you are carrying on basic research in other plant sciences like genetics or physiology, leading eventually to an understanding of the mystery of photosynthesis and the origin of life.

USSR Starts Health Plan

➤ SOVIET MEDICAL and public-health authorities have a five-year plan for improvement of health conditions in the USSR that includes several bold pioneering ventures in the medical field. These were outlined before the American Philosophical Society by Prof. Stuart Mudd of the University of Pennsylvania medical school, recently returned from a month's visit in Russia, where he interviewed about 200 doctors and public health workers.

Among the programs which he saw in actual operation were preparation of bacteriophage for combating diarrhea in children, use of the Kluyeva-Roskin "solvent" treatment for cancer, and preparation of BGG anti-tuberculosis vaccine for use on babies throughout the USSR. Pushing forward in the classic researches on neuro-psychological problems started years ago by Pavlov, Russian neurologists and psychiatrists are making use of their results in the prevention and management of mental disease.

While the program as la[illegible] down is comprehensive, special attenti[illegible] is being paid to problems connected with the health of children and the physical and mental rehabilitation of war veterans. Basic research is also coming in for generous support.

Prof. Mudd declared in conclusion: "Good will exists between scientists of the two countries who have had the opportunity for personal acquaintance. It is my earnest belief that the good of both countries demands the future broadening of the basis of mutual understanding and good will."

Race Problems

➤ PROGRAMS for the abatement of race prejudices are often laid out with much enthusiasm and good will, but because their sponsors do not make use of known principles of psychology and the social sciences they work out the wrong way, declared Donald Young, executive director of the Social Science Research Council. A few social scientists working independently and two or three leading intergroup agencies have now begun scientific analysis of inter-

SHOOTING STAR—This meteor is one of the magnificent shower visible when the earth plowed through debris left by the Giacobini-Zinner comet on Oct. 9. The flash lasted only a few tenths of a second, as the meteor was speeding along at about 10 miles a second. The photograph was made with the four-inch Ross camera at the University of California by L. Salanave and S. Inglis.

racial problems.

The speaker warned against further unscientific efforts: "Continued failure to take full advantage of the potential contribution of the social sciences in developing and testing the necessary techniques is inexcusable in view of the urgency of the problem of developing more rational race relations and the tremendous expenditure of time and money in efforts directed towards its solution."

Research in America

➤ AMERICAN medicine remained "colonial" long after the Colonies had become a nation, Prof. Richard Harrison Shryock of the University of Pennsylvania stated before the meeting. That is, medical men depended on Europe for a proper finish to their training, and especially for fundamental research.

Prof. Shryock thinks this was partly due to a Victorian revulsion to "cutting dead people open" in autopsies, partly to "the indifference of a commercially-minded people to any science that did not possess immediate utility."

However, once late nineteenth-century researches demonstrated that the "pure science" of earlier decades was proving of practical value, younger American medical men turned to research with great enthusiasm. At the same time, there was a lot of quickly-made money waiting to be used, and some of this got used in support of research. Research was long delayed in this country, but when it got started it developed with a rush.

Americans Good Observers

➤ BY FAR the greatest part of the outstanding astronomical observations have been made in America, while many of the major theoretical advances have come from overseas, Dr. Henry Norris Russell of Princeton University told the meeting. But astronomers of many nations have cooperated so closely in expanding our knowledge of the universe that their contributions are hard to untangle, he said.

The temperature and composition of the sun and stars, the sources of their energy, the dimensions and rotation of the galaxy and the vast realm of external galaxies have been disclosed by looking through the great refractors and special instruments such as a tower telescope and interpreting these observations in the light of theoretical advances.

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MEDICINE

Organization to Help Victims of Nerve Disease

➤ THE VICTIMS of a baffling and crippling nerve disease, their relatives, friends and doctors have banded together in an attempt to find weapons for conquering the malady, multiple sclerosis.

With Dr. Tracy Putman of the Neurological Institute of New York as honorary chairman, the new organization, called the Association for Advancement of Research in Multiple Sclerosis, has its headquarters at the Academy of Medicine Building in New York.

The disease is believed to be more than twice as common as infantile paralysis, but no one knows the exact number of victims.

Double vision, involuntary quivering, difficulty in walking and balancing, speech difficulty, numbness of parts of the body and emotional upsets are among the symptoms which result from a patchy destruction of the nervous system. What causes the nerve destruction is not known though there are numerous theories.

The disease most often strikes young people between the ages of 20 and 40, frequently incapacitating them for life. No cure is yet known for it.

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Research Leads to New Link Between Cancer, Diet

➤ NEW EVIDENCE for a link between cancer and diet is reported by W. D. Salmon and D. H. Copeland of the Alabama Agricultural Experiment Station.

A diet that does not contain enough choline results, within eight to 16 months, in cancers occuring in a high percentage of laboratory rats, they find. The abnormal growths, both cancerous and precancerous, occured principally in the lungs and liver.

In the experiment, dietary cancer in the livers of the animals was always found to follow cirrhosis of the liver. Cancer of the liver in people likewise follows cirrhosis in a high percentage of cases, the nutritionists point out in their report to the American Journal of Pathology.

Malignant tumors occurred in the livers of 30% of the rats receiving the low-choline diet. Primary cancers were found in the lungs of 38% of the animals. In 10% of the cases, malignant tumors developed under the skin or were imbedded in the muscular tissue. None of the control animals receiving the same diet as the others but with adequate amounts of choline developed cancer.

Choline is a relatively simple organic base, sometimes classed as a vitamin.

Of the many attempts to link cancer to diet, the work of the two Alabama nutritionists is believed to be the first in which cancer has been produced in experimental animals as a result of a specific dietary deficiency.

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While the population of *India* during the past 40 years has increased by about 100,000,000, the total area of land under cultivation has remained the same.

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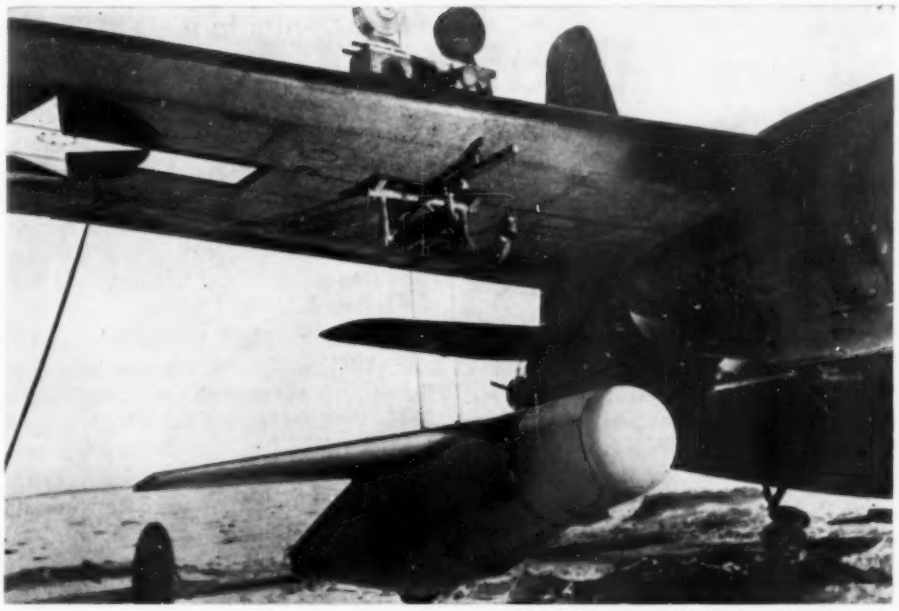

Official U. S. Navy Photograph.

ROBOT BOMB—Pulley device lifts the Bat to its launching position under the wing of a Privateer. The giant patrol carries a Bat under each wing.

RADAR

"Bat" is Guided Bomb

Its own radar guides it to its target; planes carry one or two bats, releasing one or both at the same time.

➤ A RADAR-GUIDED "suicide" bomb, that glides like an airplane and blows itself up when it almost unerringly finds its target, got its first public showing in Chincoteague, Va.

The bat, latest Naval guided missile, is no longer an experiment. It is ready for active combat use. It is now standard equipment. Navy officials are confident that it will give a good account of itself, if another war is fought.

Like the little flying animal after which it is named, the bat emits invisible waves and uses them in navigation. But the Navy's bat uses the high-frequency radio waves of radar instead of the high-pitched sound waves of the animal bat.

With a ten-foot wingspread and a body length of about 12 feet, the bat looks like a small airplane without engine or propeller. Radar equipment in its nose keeps the missile, after its release from its mother-plane, headed directly on the target, which may be an enemy ship or a land installation.

Its target can be attacked day or night, in clear or foggy weather. The bat's radar equipment is focussed on the target before its release. An operator on the mother-plane spots the enemy by radar if necessary.

The mother-plane carries the bat under its belly or under its wings. The release is made from four to eight miles away, and preferably from an altitude of from several thousand to 12,000 feet. The bat sweeps downward and forward, when freed, in a long glide to approach its prey at a low angle. Once the bat is launched, the mother-plane flies off to safety.

The radar device is somewhat like the kind used with anti-aircraft guns to keep them accurately aimed on moving aircraft. It sends out radar pulsations which originate in the bat's own battery. Reflected pulses are received on its own receiving antenna. If the target is out of the radar field center, delicate mechanisms elevate or lower the bat, or turn it to right or left, until it is in exact attacking position.

In experiments, the bat hit its target some 50% of the trials made. When it hits, its bombload explodes. It is a "suicide" craft, except that no human lives are involved as the craft is not manned.

If a big and powerful vessel is the target, two bats are released from a single plane at the same time, and they will hit at almost the same instant. The double blow would be effective upon most ships.

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ORNITHOLOGY

Owls Love Darkness, Though Their Deeds Are Not Evil

See Front Cover

➤ OWLS, bats and black tomcats are always dominating motifs in Hallowe'en party decorations, presumably because these nocturnal creatures were supposed to be the familiars of warlocks and witches, hobgoblins and demons who traditionally held carnival on the eve of the Feast of All Saints.

For owls at least a disclaimer can fairly be entered. True, they love the darkness, but not because their deeds are evil. Owls, like their day-flying kindred, the hawks, are honest, hardworking birds whose principal business is catching mice and other destructive small rodents. Anyone who kills an owl is doing himself a spite, just as much as if he kills a hawk.

The short-eared owl, shown on the front cover of this SCIENCE NEWS LETTER, sometimes violates the working rules of its own union by doing a little daylight hunting when the overcast is heavy and the daylight dim. Unlike most other owls also, it is a bird of open spaces, often being called marsh owl or prairie owl. This particular specimen was taken about 70 miles south of Chicago, and was photographed by Rev. Joseph W. Baechle, C.PP.S., of St. Joseph's College, Collegeville, Ind.

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INVENTION

Receiving Set Combines Hearing Aid Radio

➤ TWO DAYTON, Ohio, inventors, T. B. Fordham and T. W. Moore, have taken advantage of the fact that the vacuum-tube hookup and battery equipment in a hearing aid are quite similar to those in a portable radio receiving set to combine both functions in one instrument, on which they have received patent 2,409,481. The user can summon any entertainment or news that may happen to be on the air.

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MEDICINE

Anesthetics Relieve Minds

The centenary of the demonstration of ether as an anesthetic witnesses many dramatic uses of anesthetics other than for relief of physical pain.

➤ THE NEW-FOUND power of anesthetics to relieve mental anguish promises to become almost as valuable as their power to relieve physical pain, Dr. Henry K. Beecher of Harvard declared at the Massachusetts General Hospital's celebration of the one hundredth anniversary of the first public demonstration of ether anesthesia.

Wounded men during the war were sometimes saved from death by doses of an anesthetic drug too small to relieve pain but big enough to put them to sleep. One such patient described by Dr. Beecher was mad with pain. He writhed and tossed so that no one could properly examine or treat his wound. Morphine in dangerously large doses often failed to help in such cases. Only when the man had been put to sleep with a sleeping tablet, not a pain-killer, could the surgeons operate and close the wound.

Equally dramatic are the effects on mentally sick patients of this relatively new use of anesthesia. With its aid, physicians can probe the mind painlessly, just as the surgeon can painlessly probe the flesh for shell fragments in the anesthetized patient. The workings of the mind can be studied; it can be relieved and often freed of sick thoughts and feelings.

The quality of anesthetics that makes it possible to use them for this purpose of relieving mental pain and removing sore spots was discovered almost 50 years before the ether demonstration, whose hundredth anniversary was celebrated in Boston. Sir Humphrey Davy in the year 1799 while experimenting with nitrous oxide, the gas used by dentists for tooth extraction in modern times, realized that this anesthetic made it possible for him to get at levels of his mind not ordinarily accessible. Great strides have been made since then, but Dr. Beecher declared that "The potentialities for future discoveries in this field seem barely to have been tapped."

PORTRAIT PRESENTATION—Dr. Henry A. Murray (left) presented a portrait of Dr. William T. G. Morton, to Massachusetts General Hospital at its Ether Day celebration. Dr. Arthur W. Allen (center) and Dr. Nathaniel W. Faxon accepted the portrait on behalf of the hospital.

Ether Beginnings

➤ A NEWSPAPER reporter of a century ago, Albert Tenney, of Boston, was credited for helping bring to millions the boon of ether's relief from pain during surgical operations. His part in bringing about the first public demonstration of ether anesthesia just 100 years ago was reported by Dr. Reginald Fitz of Harvard Medical School.

Mr. Tenney had become a friend of Dr. William T. G. Morton, when the latter was a struggling young dentist with "a flair for publicity." As a result of this friendship, Mr. Tenney was present when Dr. Morton painlessly extracted an ulcerated tooth from a patient under ether in his office. Mr. Tenney's report in the Boston Evening Journal of this then astonishing feat was read by Dr. Henry J. Bigelow, a young physician whose father was president of the Massachusetts Medical Society.

Dr. Henry Bigelow's interest was so aroused by this newspaper account that he looked into the matter and, after watching Dr. Morton use ether in his office for extracting teeth painlessly, encouraged him to call on Dr. John C. Warren, professor of surgery at Harvard. The demonstration of ether anesthesia being celebrated followed.

Breast Cancer Not Simple

➤ IS THERE a simple way to prevent breast cancer in humans as there is in mice? Within the next 10 years scientists should have the answer.

It may be a big and disappointing NO. Women are warned against hoping too much and urged to wait for the answer before applying the method.

In mice, the method is never to let baby mice nurse from their own mothers if the mothers come from a cancer-bearing strain.

Discoveries leading to this were reported by Dr. John J. Bittner of the University of Minnesota Medical School at Ether Centenary. Some of the discoveries were Dr. Bittner's, while others were made by other scientists. In brief, the facts are these:

Mice get breast cancer from the action and interaction of three causes. These are a substance in breast milk, inherited susceptibility and hormonal, or gland, stimulation. Each is of nearly equal importance, so it is possible to control the in-

cidence of cancer by regulating any one of the causes. The most effective method, since it does not interfere with continuation of the stock, is to eliminate the milk substance by foster nursing.

These facts apply to mice. Surveys are now under way to find whether the same simple method will control cancer in women. The surveys are being made by the University of Minnesota and Ohio State University.

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GEOGRAPHY

Magnetic Poles Move

➤ GET OUT that old geography book and spot the magnetic north pole. The conventional location has been in Boothia peninsula north of Hudson Bay. Now it is in McClintock Sound.

Records of the world's leading magnetic investigators at the Carnegie Institution of Washington show that there has been actual movement during the past 40 years.

Here's the history of the imaginary spot to which the magnetic needle points:

Back in 1831, Capt. James C. Ross located the pole on Boothia peninsula in far northern Canada. Maps have had it there since. When the explorer Amundsen was in the region in 1904, he found the old location to be correct.

But after 1904, the pole began to migrate. Now it's more than 200 miles from where your school geography placed it.

Unpublished charts completed by the Carnegie Institution of Washington explain why compass needles on the "Pacusan Dreamboat's" flight from Honolulu to Cairo still pointed north as the big plane flew north of the proverbial location of the pole. The plane was still south of where the north magnetic pole of the earth is now. An earlier flight of the RAF Lancaster "Aries" in May, 1945, also showed that the pole had moved.

The south magnetic pole, too, has moved north and west about 200 miles in King George V Land in the Antarctic. But less attention has been paid it because navigators use the north-seeking point of the compass needle.

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MEDICINE

Hang-Overs Can Aid Cure

➤ HANG-OVERS are "significant events" in the life of an alcoholic. Proper handling of him at this critical period may sober him up permanently or at least add to his chances of eventually recovering from his Lost Week-End state.

This new and scientific approach to what most persons consider a nuisance or a subject for humorous remarks is taken by Dr. Giorgio Lolli of Yale University, director of the Yale Plan Clinic.

During the hang-over, both the psychological difficulties the alcoholic has been trying to escape through alcohol and the physical symptoms resulting from the alcoholism are magnified. In the early part of the hang-over the lingering presence of alcohol in his body depresses his central nervous system which includes the brain. Consequently he has less resistance and can more readily talk about the things in his life which drove him to drink. This gives the psychiatrist a chance to help him.

Medicines to relieve his misery and let him sleep are important first steps in the treatment Dr. Lolli outlines. The fact that he is being treated as a sick person and not a sinner helps the alcoholic. He gets more help when he finds that his mental and physical pain can be relieved by means other than alcohol.

Dr. Lolli does not approve of the "tapering-off" method of helping the alcoholic through his hang-over. In many cases the patient can be treated at the clinic or office, but some whose emotional and mental difficulties are serious and long-standing need to be put in an institution. The doctor should see the patient often, possibly every day, during recovery from the hang-over. This satisfies the alcoholic's overwhelming need for someone to depend on and makes it easier for him to keep away from liquor.

Details of Dr. Lolli's studies and method of treatment are reported in the *Quarterly Journal of Studies on Alcohol* (Sept.).

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MEDICINE

Bacteriophage Removes Infection from Wounds

➤ A NEW-METHOD of treating wounds with germ-eating bacteriophage was announced by Dr. V. Kolesov, Leningrad surgeon, at the meeting in Moscow of the All Union Congress of Surgeons.

The method consists in flooding the wound with the bacteriophage preparation. If the infection was localized in the surface layers of the wound, it could be removed by this method. Frequently used in Soviet military hospitals during the war, the method had beneficial effects in over 1,000 patients suffering from various surgical complaints, Dr. Kolesov reported.

Soviet doctors successfully used bacteriophages in dressing wounds to prevent severe complications. Localized applications to infected wounds of soft tissues gave positive results in 82.9% of such cases. The most effective preparation, Dr. Kolesov reported, proved to be the bacteriophage manufactured in the Metchnikov Bacteriological Institute in Moscow.

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CHEMISTRY

Natural Gas Product May Aid in Can Plating

➤ NATURAL GAS may be the means of freeing the United States from its present galling dependence on foreign sources for tin. Biggest use of tin, of course, is for coating sheet steel used in cans. A du Pont chemist, Milton J. Roedel, has invented a process for coating sheet metal with a solid polymer of ethylene, one of the constituents of natural gas, which is claimed to give at least as good protection as the conventional coating of tin.

The gaseous ethylene is turned into a solid suitable for coating purposes by subjecting it to very high pressures and moderately high temperatures. Dissolved in xylene and applied to black sheet steel in a layer one thousandth of an inch in thickness, then baked on, the polymer coating is flexible enough to withstand the bendings and crimpings encountered in can manufacture, and has high resistance to both acids and abrasion.

Rights in Mr. Roedel's patent, No. 2,406,039, are assigned to E. I. du Pont de Nemours and Company.

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ENGINEERING

Air Bubbles Improve Quality of Concrete

➤ NOW AIR BUBBLES are trapped in concrete to improve its quality, Charles E. Wuerpel, of the Army Waterways Experiment Station, Vicksburg, Miss., told the American Society of Civil Engineers.

Air bubbles in concrete are purposely created by the addition of pine resins, animal or vegetable fats and oils, and other saponifiable matter to the cement or at the concrete mixer. The process is known as air-entrainment.

"Widely dispersed spheroids of air in concrete," he continued, "will increase the resistance of the hardened mass to frost action and to chemical action by salts used for de-icing pavements far beyond that achieved with non-entraining concrete."

Pavement concrete for highways has been treated in this way, and facts gathered now show concrete used in buildings and other structures can benefit from the process.

These purposefully-created bubbles are explained as an additional aggregate, like sand, stone, gravel or slag, but they possess flexibility of shape. He stressed their advantage over rigid angular and sub-angular grains of sand or cement that can not accommodate themselves to the movement of other grains. The improvement in uniformity of bond completely offsets the possible slight reduction in bond strength, he argued.

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WILDLIFE

DDT Kills Mosquitoes Without Harming Fish

➤ DDT IN MIST-FINE sprays loosed from airplanes over the man-made lakes in the Tennessee valley was effective in killing the mosquitoes it was aimed at, but did no material harm to the fish in the lakes or to the small, water-inhabiting animal forms on which the fish feed.

This was discovered in tests by Dr. A. D. Hess and G. C. Keener, Jr., TVA biologists, during the season just closed.

In over-all effect, the malaria-bearing anopheline mosquitoes were almost completely wiped out, and the culicine mosquitoes, that merely annoy by biting, were significantly reduced in numbers. Some other insects, notably surface-skimming bugs and beetles, were seriously affected. Some of the surface-feeders, especially the waterstriders, are carnivorous, competing with fish for food, so that their elimination may be a gain rather than a loss.

Principal animal food of fishes consists not of insects but of small crustacea —tiny, wiggling relatives of crayfishes. On these the DDT had very little effect.

The two biologists caution that their conclusions are based only on the dosage and application method used. Harm might result, they state, from heavier dosage and different application methods.

Detailed results of their investigations will be published in the *Journal of Wildlife Management.*

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ENGINEERING

Lightweight Truck Bodies Will Be Available Soon

➤ TIRES THAT ROLL 100,000 miles, and lightweight bodies for commercial vehicles that contribute to speed and economy, will be available when the automotive industry gets into high-speed gear again. The tires are now being produced, and lightweight truck bodies have passed the experimental stage.

The 100,000-mile tire already is available, Ben Sorci of Chicago told the Society of Automotive Engineers in Chicago. To get this wear, proper maintenance is essential, of course. Under present methods of operation the average truck owner gets no more than 50% of the mileage actually built into tires.

Approximately 25% more mileage for tires on motor trucks with aluminum bodies, as compared with conventional heavy bodies, can be expected, J. H. Dunn, of the Aluminum Company of America, declared at the same meeting. Also, 10% less fuel is required for such trucks and there is a 10% step-up in acceleration. Magnesium is eminently suitable for truck bodies, he said. In addition to tire and fuel saving, lightweight bodies built either of aluminum or magnesium provide economy by their resistance to corrosion.

Records were presented by F. O. Lewis, of Dayton Power and Light Co., which show that large increases in miles-per-gallon of fuel, and large decreases in operating costs resulted with aluminum-body trucks. The saving in license fees alone, he said, more than offsets the higher cost of aluminum over steel, or wood-and-steel bodies.

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IN SCIEN

AGRICULTURE

Dehydrated Potatoes May Substitute for Corn

➤ DEHYDRATED POTATOES that didn't make much of a hit with many GI's during the war may be used as a substitute for corn—in feeding sheep.

The moisture-removed spuds being fed sheep in tests at the North Dakota Agricultural College Experiment Station are low-grade potatoes that the industry has trouble disposing of profitably. Results of the experimental feeding last spring indicates that potatoes are 73% as effective as a corn diet, but with additional protein and minerals, the dehydrated product can be used as a substitute for corn.

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MEDICINE

Allergy May Prevent Wounds from Healing

➤ ALLERGY is now a suspect in surgical and other wounds that heal too slowly.

This is indicated in a case report by Dr. Albert H. Rowe, University of California physician, in the *Western Journal of Surgery, Obstetrics and Gynecology* (Oct. 19).

In the case reported by Dr. Rowe, the first of its kind in medical literature, the patient's wound healed within three weeks after his allergy symptoms had been treated successfully.

The wound had remained unhealed for two-and-a-half years after an appendicitis operation. A glistening, thin, reddish membrane had formed over the wound two months after operation, and it exuded a bloody discharge every two or three weeks.

Dr. Rowe found that the patient had suffered from life-long cramping abdominal pains and indigestion, signs of gastro-intestinal allergy.

Treatment consisted of a fruit- and cereal-free elimination diet, which relieved the allergy symptoms. The wound has remained healed for over two years.

Dr. Rowe suggests that chronic allergy should always be given consideration in wounds that fail to heal properly.

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NE FIELDS

MEDICINE

Distribution Process Separates Penicillins

➤ PENICILLINS are not merely four, as at present recognized and labeled, but "innumerable," Dr. Lyman C. Craig of the Rockefeller Institute for Medical Research told members of the American Chemical Society in New York.

Separation of these hundreds or thousands of still-unknown types of penicillin, and study of their potencies, will not depend on the time-consuming determinations of their individual boiling-points or melting-points hitherto in use, but on a new method, which the speaker called "counter-current distribution."

This system is partly physical, partly mathematical, the speaker explained. The procedure involves a system of multiple transfers of the substance under study through a series of separatory funnels so that the mathematics of the binomial theorem may be applied directly to the interpretation of the results.

Science News Letter, October 26, 1946

MEDICINE

Xenon May Become Useful as Anesthetic

➤ ONE OF the rarest of gases, xenon, which forms about one 170-millionth of the atmosphere, has possibilities as a new, non-explosive anesthetic, it is indicated by recently released University of California wartime research.

In "tracer" experiments with radioactive xenon, a group of researchers in the Aero-Medical Unit found that the inert gas has narcotic effects on human subjects as well as mice.

In addition to finding obvious physical anesthetic effects, the researchers took radio-autographs of mice fed radioactive xenon, and found that the gas had permeated the spinal cord and whole nervous system in the characteristic manner of anesthetics.

With the radio-autograph technique, the mouse literally takes his own picture after being sacrificed. Selected slices of tissue are placed on a photographic plate, and the radioactivity produces a picture similar to an X-ray, showing the distribution of the substance.

The anesthetic quality of xenon was discovered when the group of scientists were studying high-altitude sickness. In studying the effect of rare gases on human subjects, they received complaints of dizziness and numbness by subjects breathing a mixture of krypton and oxygen at atmospheric pressures.

This set the scientists on the following chain of reasoning: first, nitrogen, closely related to krypton and xenon in the inert gas family causes dizziness and numbness at high altitude, the reason being that it dissolves rapidly in the body in a rarefied atmosphere but not at sea level; second, xenon is much more soluble in the body than either krypton or nitrogen; third, therefore xenon might be anesthetic at sea level.

The reasoning proved to be correct, a mixture of 70% xenon and 30% oxygen producing in mice temporary staggering, stupor and paralysis.

Because xenon is extremely rare and no economical method is known of separating it from the air, detailed experiments could not be conducted on human subjects. This factor may also make it more difficult to develop the gas as a practical anesthetic.

The scientists said that while the effect of xenon alone is not enough to produce prolonged anesthesia, it may be possible to obtain such an effect by mixing it with another substance.

Dr. John H. Lawrence, assistant professor of medicine, performed the experiments with the assistance of Drs. H. B. Jones, C. A. Tobias, and J. G. Hamilton.

Science News Letter, October 26, 1946

ENGINEERING

Method of Testing Soil Strength Uses Piston

➤ A METHOD of testing the bearing-strength of the soil on a site proposed for an airfield was described by W. J. Turnbull of the Vicksburg station to the American Society of Civil Engineers. This California bearing ratio method, questioned by some engineers, is adopted by the Army Corps of Engineers "for reasons which were considered sound."

A three-square-inch circular piston is forced into the soil and the resistance to penetration is measured. This resistance is converted to a bearing ratio by comparing it to the resistance of a high-bearing material adopted as a standard.

Science News Letter, October 26, 1946

CHEMISTRY

Better Liquid Scrub Soaps To Reach Public Soon

➤ MORE AND BETTER liquid scrub soaps, despite the acute shortage of fats and oils, will soon reach the public, thanks to a new formula being widely adopted by soap manufacturers.

Ever since the government clamped down on putting edible fats and oils into the soap kettle, soap makers have been searching for more and more extenders and fillers to pad out their production. The new formula not only doubles the yield of liquid soap without increasing fat consumption, but it makes a better soap for cleansing and rinsing in hard water.

The essential chemical compound in the new liquid soap formula, as developed by the Rohm and Haas Co. of Philadelphia, is a synthetic wetting agent, alkylated aryl poly-ether sulfate. Given the trade name Triton X-300, the chemical is closely related to other synthetic organic compounds used in cosmetics, car washers, and soapless household cleaners.

Science News Letter, October 26, 1946

PSYCHOLOGY

Girls Start Outtalking Boys Early in Life

➤ BABY GIRLS utter more speech sounds than do baby boys. Boys and girls begin with the same number of phonetic sounds during the first year of life, but girls outtalk boys during and after the second year.

This discovery was made by Orvis C. Irwin and Han Piao Chen, of Iowa State University, from a study of 95 infants ranging in age from one to 30 months.

The scientists visited most of the babies in their homes twice each month during the first two and a half years of life. At each visit they recorded all sounds uttered by the infant on 30 breaths.

During the first two-month period of life the average baby masters 7.5 different kinds of sounds, the scientists report in the *Journal of Experimental Psychology*, (Oct.). Greater progress is made during the first year of life, they found, but its vocabulary at two and a half years includes 27 of the 35 sounds present in adult speech.

Science News Letter, October 26, 1946

ASTRONOMY

Orion Forecasts Winter

Warrior will shine in east on November evenings after a summer vacation from visibility. A partial eclipse of the sun may be seen on Nov. 23.

By JAMES STOKLEY

➤ FOR THE FIRST time since last April, the constellation of Orion, the warrior, appears on the maps accompanying these articles—a certain forecast, if it were needed, of the approach of winter. This figure appears to the southeast, just above the horizon, the three stars that mark Orion's belt standing vertically. To the left is Betelgeuse, in his shoulder, and to the right Rigel, in one leg, so that Orion is on his back in a rather unwarriorlike position.

The brightest star on the maps (which are drawn for 10:00 p.m. about Nov. 1 and 9:00 p.m. in the middle of the month) is Vega, in Lyra, the lyre, in the northwest. Above this group is the northern cross, part of Cygnus, the swan, with first magnitude Deneb at the head of the cross. To the left is Aquila, the eagle, with Altair.

But it is to the east that our finest display of bright stars appears. There, in addition to the two mentioned in Orion we have, above, Aldebaran in Taurus, the bull, and Capella in Auriga, the charioteer. And if you happen to stay up late some November night and see a still brighter star below Orion, that will be Sirius, the dog star, which does not now rise in time to be placed on the maps.

November this year is not a good month for planets, as only Saturn becomes visible at any time during the night. It is in Cancer, the crab, which is next door to Gemini, and below the horizon until about midnight. By then, Saturn will be visible, and will remain in view the rest of the night.

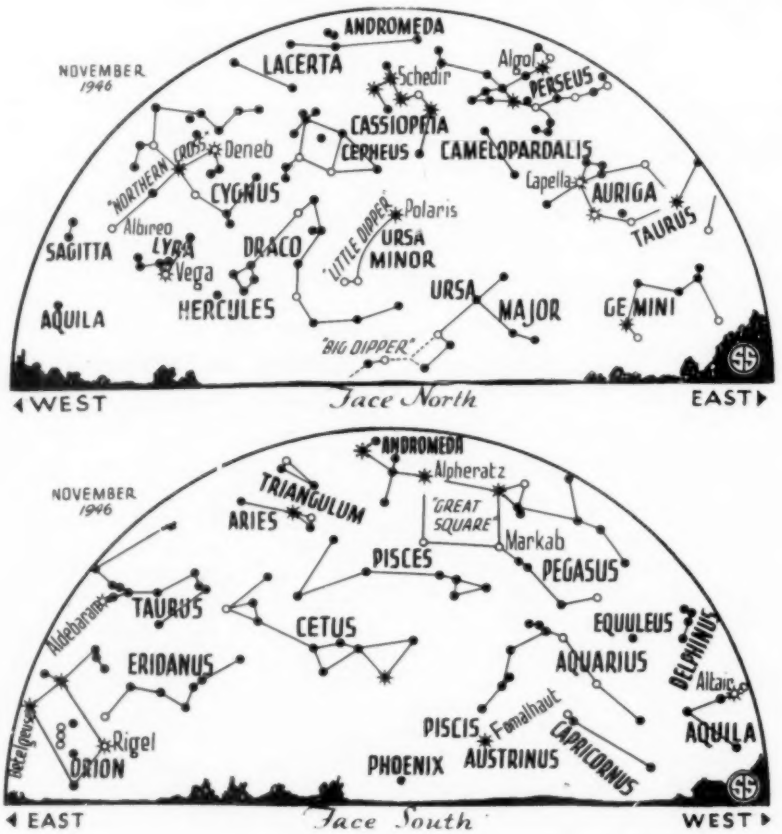
For the first time this year an eclipse of the sun will be visible in the United States and Canada in November, but it will not attract the interest of astronomers, as did that of July 9, 1945. That was total over a path crossing the northwestern parts of the United States. Over a larger area it was seen as partial. The one that occurs on Saturday, Nov. 23, will not be seen as total any place on the earth.

The shadow of the moon in space has two parts. The core, which tapers from the moon to a point at a distance about equal to that of the earth, is called the "umbra" and from within it the moon completely hides the sun. But there is a larger, outer part of the shadow, the "penumbra," in which one sees the dark lunar disk only partially covering the solar face. When the umbra touches earth, as it did in July, 1945, it traces out a path where a total eclipse occurs and at the same time the larger area covered by the penumbra includes that where the eclipse is partial. In this penumbral area the eclipse is more nearly total the nearer one is to the umbra. Thus, whenever there is a total eclipse, there is a partial eclipse over a far greater area.

However, the converse to this proposition is not true. It may happen that the umbra fails to touch the earth at all, but the penumbra does. Then we have an eclipse which is only partial, and that is what happens on Nov. 23. The umbra then passes well above the Arctic regions, but the penumbra covers all of Canada, except the extreme northwest, and all of the United States with the exception of the southwest. The greatest eclipse will occur in the region of Labrador, where more than three-fourths of the sun's diameter will be hidden. As we get away from this area, the magnitude of the eclipse will be less and less, as indicated by the following table for a few typical cities. This also shows the times at which the eclipse will be greatest in these places.

	Percent	
Boston	60	12:30 pm EST
Washington, D. C.	51	12:22 pm EST
Atlanta	36	12:13 pm EST
Chicago	44	10:59 am CST
New Orleans	22	11:06 am CST
Denver	18	9:33 am MST
Portland, Ore.	08	8:14 am PST

In observing the eclipse, be careful not



☼ ✸ ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

to look directly at the sun. A dense photographic negative is a good protection to hold in front of the eye when watching it, or else one may look through a pinhole in a card. Then, a while before the times mentioned above, the dark edge of the moon will begin to encroach on the upper part of the sun, and gradually get larger and larger until the maximum eclipse. After that the moon will go off from the sun's lower limb.

If you want to try a photographic record of this eclipse, you may do so by setting up your camera on a tripod or some steady support and pointing it to the southeast, the part of the sky through which the sun will move. Since the sun is so bright, you should use the smallest stop and an exposure of perhaps a fiftieth of a second. Make one exposure as it starts, then one every five minutes during its progress; without, of course, moving the camera. The result will be a series of images of the sun, in various stages of occultation.

Celestial Time Table for November

Nov.	EST	
1	11:40 p.m.	Moon in first quarter
4	2:19 a.m.	Algol (variable star in Perseus) at minimum
6	11:07 p.m.	Algol at minimum
9	2:10 a.m.	Full moon
	7:56 p.m.	Algol at minimum
10	8:00 a.m.	Moon nearest, 223,300 miles
14	3:08 p.m.	Moon passes Saturn
15	early a.m.	Meteors of Leonid shower visible
	5:35 p.m.	Moon in last quarter
17	2:00 p.m.	Venus passes sun
23	12:24 p.m.	New moon, partial eclipse of sun
25	5:00 p.m.	Moon farthest, 252,500 miles
27	12:50 a.m.	Algol at minimum
29	9:39 p.m.	Algol at minimum

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, October 26, 1946

MEDICINE

Vaccine May Stop Mumps

Inoculation may make adults immune to mumps, although length of immunity is not yet known. Vaccine is successful on monkeys.

➤ The first mumps vaccine in history is in the final stages of development in the laboratory of Dr. Karl Habel, research scientist at the National Institute of Health. It has already proved successful in immunizing monkeys to mumps.

Dr. Habel's work began in 1940, when Army, Navy and public health authorities met to map the strategy against epidemic diseases in the expected war. Major emphasis was placed on combatting mumps, which in World War I ranked among the top infectious illnesses in disabling men.

In addition to being a nuisance disease and a time loser, mumps in men can have serious consequences since it may cause sterility in the adult males it afflicts. According to Dr. Habel, about 50% of the population have had a childhood attack of mumps which gives immunity, and some persons may have acquired immunity without having an attack.

Dr. Habel was able to test his vaccine on a huge scale last summer when he inoculated over a thousand West Indians in Florida. They came to this country under the auspices of the War Food Administration to work in the sugar fields. Since mumps is a rare ailment in their islands, the men were particularly susceptible. Last year mumps struck 600 out of 3,000 Jamaicans in the same area.

Although the results are not yet in, the vaccine now looks promising.

Dr. Habel, who manufactures his own vaccine, incubates the virus in monkeys and chick embryos. After the virus has been developed to desired potency, it is whirled through a centrifuge to concentrate the virus particles. It is then made sterile by ether, formaldehyde or ultraviolet rays. The resulting vaccine stimulates the body to develop antibodies.

"It is encouraging to note," Dr. Habel says, "that the number of antibodies so developed is the same as those resulting from a regular attack."

It is not yet known, however, whether the immunity produced by the vaccine will be life-long like that after a natural siege of the disease.

Dr. Habel points out that it is probably not a good idea to use the vaccine on children. Since the vaccine may not give life-time immunity, a boy may grow up without having had mumps and so expose himself to serious possibilities when a man. Mumps in children generally is a mild illness.

But the mumps vaccine should be useful for adult travelers from countries where mumps is relatively unknown to places like the United States where it is prevalent. It will be valuable for parents who have not had mumps to protect themselves from their youngsters. Persons having to live together intimately, as in the barracks-like dormitories of today's colleges, will also be benefited.

Science News Letter, October 26, 1946

CHEMISTRY

Sulfur-treated Petroleum Makes Soap Substitute

➤ NEW HOPE for soap-seeking housewives was voiced by a chemist who said that an efficient soap substitute has been made from petroleum treated with sulfur.

Dr. Chester M. Suter, associate director of the Sterling-Winthrop Research Institute, Rensselaer, N. Y., described a new method of sulfonating petroleum which was used in Germany during the war to produce a substitute for soap and other types of cleansing agents. He added that American research on this process now produces useful products.

Mersol, one of the German soap substitutes, had excellent wetting quality, very good foam formation and great stability in hard water plus high washing power, Dr. Suter reported.

Science News Letter, October 26, 1946

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Do You Know?

Americans eat ten times as much *shrimp* as lobster.

Fall is the best time to turn over soil in the home garden.

Soot from wood contains carbon and some ammonia and, therefore, has value as a fertilizer.

Ammoniated mercury, in a cream, has been successfully used to make Negroes' skins several shades lighter.

The average gross value of *crops* grown in 1945 on lands under government-built irrigation projects was over $100 an acre.

Highway *post offices* have been added to the U. S. postal system; they are motor vehicles, within which mail is sorted en route, that pick up and deliver sacks at local stationary post offices.

Oil of wormwood, distilled largely in southern Michigan from an herb, *Artemisia absinthium,* is a component of a flavoring agent used in alcoholic beverages of the vermouth type and in cordials.

The *wild duck* population of the United States has declined from approximately 125,000,000 in 1944 to some 80,000,000 this year due to drought conditions in the north central states and Canada, and overshooting in 1945.

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NUCLEAR PHYSICS

Neptunium 237 Fissions

This isotope of the recently discovered element will not make an atomic bomb, and only a small quantity is available for experimentation.

➤ A THIRD CHEMICAL element can be split asunder by slow neutrons and made to release atomic power, Prof. Glenn T. Seaborg of the University of California, codiscoverer of this chemical element as well as the atom-bomb's plutonium, has announced.

But the neptunium isotope 237 is still a scientific curiosity, manufactured as a plutonium byproduct with only a hundred milligrams (a mere three hundredths of an ounce) available for scientific studies.

Diplomats worrying about international control of the atomic bomb need not be concerned about this latest fissionable element. It can't be used in making atomic bombs.

It may eventually be used in atomic power production, but it can't be produced in a large quantity, as plutonium, or even uranium 235, the other two fissionable elements.

Neptunium 237 was originally discovered in 1942 by Dr. A. C. Wahl and Dr. Seaborg, but that it would fission was not previously announced.

Existence of a second isotope 241 of plutonium was announced, the original variety being 239, used in the Nagasaki bomb.

Three new isotopes of neptunium were announced, numbers 234, 235 and 236. Two isotopes of curium, element 96 and present highest in atomic number, were announced, 240 and 242. All these have half-lives measured in hours, days or months.

But one previously known isotope 241 of americium, element 95, also manufactured by atomic transmutation, was found to have a half-life of 500 years.

The new neptunium isotopes were produced by bombardment of uranium with 22,000,000 electron volt deuterons (hearts of heavy hydrogen) and 44,000,000 electron volt alpha particles (hearts of helium) in the 225-ton cyclotron under direction of Dr. J. G. Hamilton.

Science News Letter, October 26, 1946

EDUCATION

Board Stresses Education In Agriculture for South

➤ EDUCATIONAL correctives for the "human erosion" that gnaws the folk of the South, as water and wind gnaw at her soil, is receiving major emphasis in the program of the Rockefeller General Education Board, Raymond B. Fosdick, its president, states in the Board's annual report.

Especial stress is being placed on the more practical phases of agricultural education, particularly on the rational utilization of land resources, and on soil preservation and rebuilding. Advantages of this training are offered to Negroes as well as to whites.

Mr. Fosdick adverts to the oft-cited low expenditures for education in the South—less than half of what it is in many northern states. "It is not well known, however," he points out, that most southern states are spending a larger percentage of their income on education than is expended by many of the wealthier states of the North, West and Middle West."

Science News Letter, October 26, 1946

Lactic acid, widely used in industry, can be made cheaply by a new process from sulfate liquor, a pulp mill waste.

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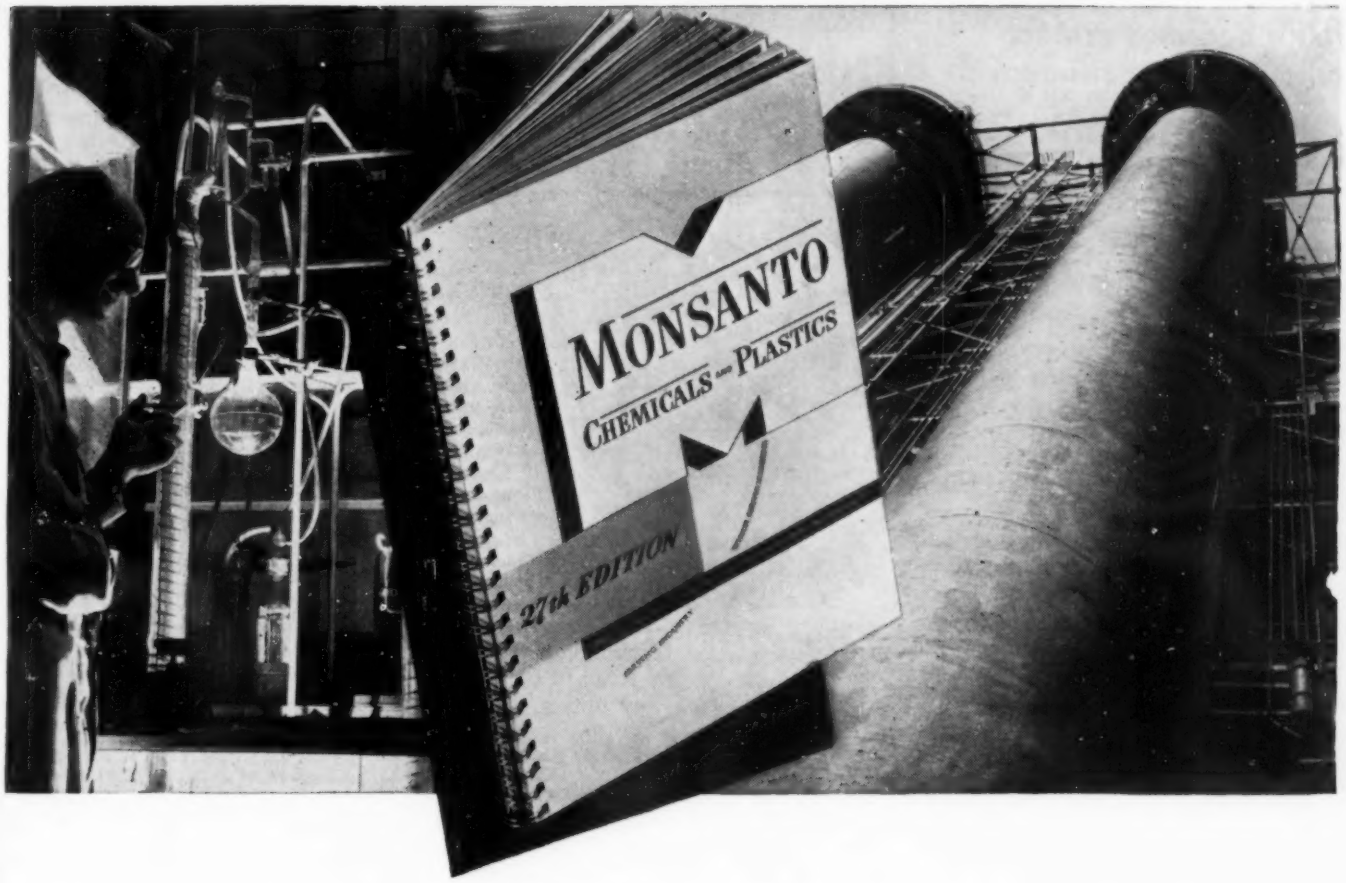

Meet the Future...through Chemistry

To help industry meet the expanding future and still further improve the welfare of mankind, Monsanto is progressively active in many directions.

In terms of physical capacity, for instance, Monsanto has already started a $48,000,000 plant expansion program. As this work is completed, it will not only enable Monsanto to produce in larger quantities its many hundreds of chemicals and plastics — it will also help Monsanto contribute many new products still in the development stages.

Research facilities and activities, too, are constantly stepped up and broadened. Within the past few months, Monsanto has set aside $2,500,000 to be devoted solely to exploring the peacetime possibilities of the atom as a source of constructive power. This research will be centered at Oak Ridge, Tennessee . . . Also, Monsanto has recently inaugurated a research policy which provides academic leave for outstanding Monsanto industrial scientists, who may continue their studies at universities of their choice, for a full year at full salary.

This is but a glimpse of Monsanto's preparations to meet the future of industry. It is related primarily as an invitation to consult Monsanto on any aspect of your immediate or long-range developments.

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ENGINEERING

Roller Bearings Protect Building from Earthquake

➤ ROLLER BEARINGS are being installed in a building in Los Angeles as a protection against damage from earthquake shocks.

The installations are under the main pillars of a three-story addition atop a six-story Sears, Roebuck building, a structure completed before the city's present building code had been adopted.

Sixty-five sets of especially designed bearings, each weighing 600 pounds, are being used. Each assembly supports a load of 250,000 pounds, and acting together the bearings permit the three-story addition to move six inches in any direction. Their use divorces the vertical loads, due to gravity, from the horizontal forces exerted by the ground waves of an earthquake.

Each anti-earthquake bearing consists of three steel plates with two sets of steel rollers placed at right angles to each other. One set of rollers permits movement in one direction; the other set, movement at a right angle. If a diagonal shock is experienced, both sets operate.

The bearings were made by the Torrington Company of South Bend, Ind.

Science News Letter, October 26, 1946

SECRETS OF INDUSTRY

BY LEWIS C. ORD

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BOTANY

NATURE RAMBLINGS by Frank Thone

Beauty Betrayed

➤ FRINGED GENTIANS, through most of their former range in the northeastern states, have become so rare that enthusiastic flower lovers and keen students of botany may go for years without seeing even one of their beautiful blue blossoms. And it is all a result of over-enthusiasm by flower-lovers of a former generation—our grandfathers and grandmothers, who saw no reason for letting a flower stand on its stem if they happened to fancy it and wanted to carry it home and put it in a vase. That's what happened to millions of fringed gentians back in the nineteenth century—they died in parlor vases.

It is a bitter shame that this had to happen, for of all the blue-and-gold beauty that is autumn, no one thing ever stood out with more beauty than the fringed gentian. Both in gracefulness of form and ringing clearness of color, it seems more like a spring flower than one of late autumn. The four flaring upper ends of its petals, standing out boldly from the green calyx that offers them to the sun, are something for poets to write about. Indeed, one of the best of early American poets, William Cullen Bryant, dedicated one of his finest poems to the fringed gentian.

One reason why the fringed gentian has suffered so badly at the hands of its too-possessive friends is that it depends primarily on seed for its propagation. If you pick the flower you pick next year's gentians, too, and those of many a year thereafter—unless there chance to be some hidden flowers that you have overlooked. So the best thing to do, if you chance on a few survivors, is to look your fill, but let them alone—and don't tell anyone else of your discovery.

In one part of our country, fringed gentians live and flourish in great abundance. That is in the northern Rockies; in Yellowstone National Park within easy sight of the tourist highways there are whole alpine meadows that are blue with gentians in July and August—for these flowers, like all mountain flowers, must come into bloom early to avoid the early winter. This gentian, of course, is not identical with the fringed gentian of the East. But allowing for its somewhat greater size and sturdiness, it passes fairly enough for a western sister of the flower that Bryant loved.

Science News Letter, October 26, 1946

GEOLOGY

Helium Gas Traces Oil, Gas Movements

➤ THE NON-INFLAMMABLE light helium gas that gives lift to American blimps and balloons has found a new use.

It is being employed in West Virginia as a tracer to chart underground movements of oil and gas. This is its first use for this purpose in the East, but it has been tried successfully in both California and Texas.

Helium is especially suitable for this purpose because it is an inert gas, so inactive that it has never been found in compounds. It retains its identity though mixed with other gases and oil-well fluids.

It is being injected into oil- and gas-bearing layers deep in the earth. It travels with the gas or oil, and finds its way to output wells in the vicinity.

By careful observation of the length of time for the helium to travel to the adjacent output wells, and determining the amount of helium in each producing well, engineers can determine with reasonable accuracy the reservoir conditions between the two wells.

Science News Letter, October 26, 1946

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Books of the Week

ADVENTURING IN SCIENCE, DIRECTED ACTIVITIES II—Powers, Neuner, Bruner and Bradley—*Ginn,* 166 p., diagrs., illus., charts and maps, paper, 68 cents. A workbook to guide pupils in their study of the accompanying textbook, Our World Changes.

ADVENTURING IN SCIENCE, DIRECTED ACTIVITIES III—Powers, Neuner, Bruner and Bradley—*Ginn,* 166 p., diagrs., illus., charts, and maps, paper, 72 cents. A workbook to guide pupils in their study of the accompanying textbook, Using Our World.

ANIMAL TALES: An Anthology of Animal Literature of All Countries—Ivan T. Sanderson, Ed.—*Knopf,* 510 p., illus., $5. This collection of 31 great animal stories, both fictional and true, has been gathered from all over the world. For each tale the author supplies by way of prologue a little essay on the land, its flora and fauna, and ecological significance.

THE CHALLENGE OF MARRIAGE—Rudolf Dreikurs—*Duell, Sloan & Pearce,* 271 p., $3. In this book the author deals with the psychological and social factors which are responsible for our present-day confusion in the problems of sex, love, and marriage. The understanding of these basic factors will help the individual in his efforts to solve the common problems of marriage.

CHEMISTRY OF FAMILIAR THINGS—Samuel S. Sadtler—*Lippincott,* 310 p., illus., diagrs. and tables, $4. This book discusses fully air, water, metals, rocks, soil, food, textiles, light, heat and the chemistry of many household substances. A store of valuable information bearing upon everyday life and problems will be found in this layman's chemistry.

THE GOLDEN ENCYCLOPEDIA—Dorothy A. Bennett—*Simon and Schuster,* 125 p., illus., $2.50. The book will answer questions on the past, present and future wonders of the world. There are sections on almost everything that children will want to know about—animals, plants, airplanes, jewels, and many other things. Throughout the book an effort has been made to show the relationship of ideas and things.

HARVEY CUSHING: A Biography—John F. Fulton—*Charles C. Thomas,* 754 p., illus. and diagrs., $5. The story of a great medical pioneer, whose desire for perfection in every detail of his surgical ritual, his writing, and his drawings was carried over into his daily living. The result of his systematic preservation of books and papers has been an almost unparalleled wealth of biographical material. This has been condensed into a single volume which medical student and general reader alike will find interesting and challenging.

INTRODUCTION TO COLLEGE MATHEMATICS—Carroll V. Newsom—*Prentice-Hall,* 344 p., diagrs. and tables, $4.65. This book has been developed to meet the needs of those students who want some college mathematics, but who do not intend to specialize in mathematics or science.

LYMPH—Ralph Waldo Miner, Ed.—*New York Academy of Sciences,* 203 p., illus., tables and graphs, paper, $2.75. Vol. XLVI, Art. 8.

NOTES ON NURSING: What It Is, and What It Is Not—Florence Nightingale—*Lippincott,* 80 p., tables, $1.25. This book is a facsimile of the original 1859 edition. Its basic discussion of bedside nursing, its common-sense evaluations, all preserve a distinguished background to nursing and will be read and made a valuable part of any nurse's armamentarium.

OPERATIVE GYNECOLOGY—Richard W. Te Linde, M.D.—*Lippincott,* 751 p., illus. and diagrs., $18. The present volume attempts to bring the subject of operative gynecology up to date and to make recent information on that subject available in a single volume. The book is written with the primary purpose of describing the technique of the unusual and some of the rarer operative procedures.

OPHTHALMOLOGY IN THE WAR YEARS—Meyer Weiner, M.D. Ed.—*Year Bk. Pubs. Inc.,* 1166 p., $13.50. A review of all obtainable articles published on ophthalmology throughout the world, beginning with January, 1940, and continuing until 1943.

PROCEEDINGS OF THE MEXICAN-AMERICAN CONFERENCE ON INDUSTRIAL RESEARCH—Sept. 30-Oct. 6, 1945—Sponsored by *Armour Research Foundation* of Illinois Institute of Technology, 176 p., paper, $2.50.

SEX EDUCATION: A Guide for Parents, Teachers, and Youth Leaders—Cyril Bibby—*Emerson,* 311 p., $2.50. This book has been written to help parents, teachers, and youth leaders to give children the kind of sex guidance that will equip them for intelligent and happy living. Besides telling how to give the facts, and what facts to give, it stresses the importance of right attitudes.

TATOOSH—Martha Hardy—*MacMillan,* 239 p., illus., $2.75. The book is a vigorous, authentic and lively account of another way of life. It is a first-hand story of a "school ma'am" who spent three months as a "lady lookout" for the U. S. Forest Service. Her post, Tatoosh, is one of the highest peaks in the Cascade Mountains of Washington.

WHAT GOES ON AROUND YOU—F. H. Hagner—*Position Finder Corp.,* 28 p., illus., diagrs. and chart, paper, $2. This book, showing new illustrations, a star and time zone chart with seven measuring tapes, enables one to obtain a clear understanding of our universe.

Science News Letter, October 26, 1946

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ENGINEERING

"Submarine Jeep" Travels Through Deep Puddles

➤ LATEST ACCOMPLISHMENT of the war-famed jeep is to travel through water that comes above the engine hood, or as deep as the driver can go.

Two periscopes and the driver's head are all you see above the water as the vehicle travels through a deep puddle. The periscopes, for air intake and exhaust, are a part of a deep-water fording kit that includes parts and attachments that seal the motor.

The "submarine jeep" is the Navy's latest amphibious vehicle. The new attachments are expected to help the jeep ford streams or other small bodies of water.

Science News Letter, October 26, 1946

Two Books
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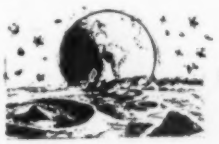
THE ANGRY PLANET

By John Keir Cross Illustrated by Robin Jacques. This is a plausible fantasy about the first rocket-ship flight to Mars with two boys and a girl as accidental stowaways. Seldom does a book offer young minds such entertaining food for thought. The illustrations convey all the imaginative beauty of the text. 256 pages. Ages 12-15. $2.00

THIS IS THE MOON

By Marion B. Cothren illustrated by Kurt Wiese. In this book, which reads like a story but is scientifically accurate, the reader takes a jaunt around the earth to hear the moon myths of many peoples—Chinese, Hindus, Africans and American Indians. During the trip he learns the answers to most of his questions, such as, "Why does the moon change its shape?" 96 pages. Ages 8-12 $2.00



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❁ *POTATO PEELER for the home, designed to fit on the base of an ordinary electrical mixer, removes the skins by the rubbing and scraping action of a rotary brush and stationary abrading surfaces. Placed in the sink, a stream of water washes the peelings away.*

Science News Letter, October 26, 1946

❁ *CHEMICAL DEFROSTER, to clear automobile windshields of ice, sleet or frozen rain, thaws the blinding frost when rubbed with a rag to which a few drops of the liquid has been added. The defrosting chemical leaves the windshield clean as well as clear, and is harmless to auto finishes.*

Science News Letter, October 26, 1946

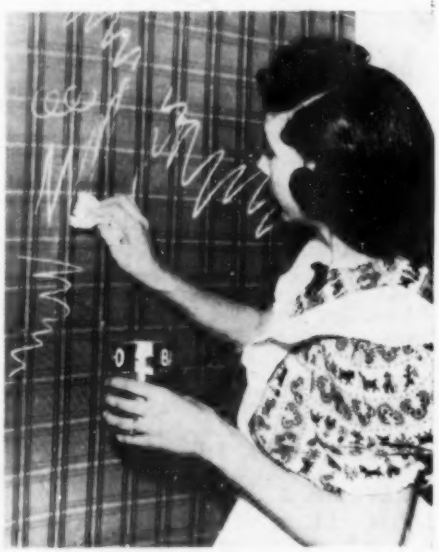
❁ *BOTTLE OPENER removes caps easily and at the same time prevents squirting overflow. An aluminum bell-shaped device, that fits over the bottle top and cap, has upward extending plier handles which, when squeezed, force three claw-like fingers under the cap.*

Science News Letter, October 26, 1946

❁ *FLAT IRON replacement heating unit is so constructed that it can be easily installed in most electric irons. Heavy die-cut mica forms are wound with flat chromel or nichrome resistance wire, with thick mica insulating protectors machine-riveted to both sides of the heater coil.*

Science News Letter, October 26, 1946

❁ *WALLCLOTH, with its threads in-*



side shields of transparent plastic, is particularly suitable to use instead of wallpaper on kitchens and children's rooms because it can be cleaned with ordinary household soaps and solvents. The picture shows a youngster's writing being removed with a common cleaner.

Science News Letter, October 26, 1946

❁ *LAMP SHADES made of a fiber glass material reflect and diffuse the light through their millions of tiny facets to give a result somewhat approximating sunlight. Made in four colors, they are decorative, fire-resistant, easily cleaned with a wet cloth, and will not warp, sag or wrinkle.*

Science News Letter, October 26, 1946

❁ *AIRCRAFT WIRE, which reduces fire hazard, is 30 per cent lighter than ordinary electrical wire and in large transports saves up to 300 pounds in weight. The wire is coated with glass fiber and a fire-resistant synthetic rubber which is little injured by oil, chemicals and fungi.*

Science News Letter, October 26, 1946

❁ *WATER FILTERS, which remove mineral salts, contain cartridges of special resins which may be replaced when they have reached demineralizing capacity. The removed cartridges can be regenerated with dilute acid and alkali solutions. The filters deliver practically pure water.*

Science News Letter, October 26, 1946

If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., N. W., Washington 6, D. C., and ask for Gadget Bulletin 334. To receive this Gadget Bulletin without special request each week, remit $1.50 for one year's subscription.

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